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WILBUR CURTIS COMPANY, INC.

Service Manual – Soluble Coffee Machine

Models Included
- ◆ SD2



WARNING HOT LIQUID, Scalding may occur. Avoid splashing.



CAUTION: Please use this setup procedure before attempting to use this appliance. Failure to follow the instructions can result in injury or the voiding of the warranty.



CAUTION: DO NOT connect this unit to hot water. The inlet valve is not rated for hot water.

Important Safeguards/Conventions

This appliance is designed for commercial use. Any servicing other than cleaning and maintenance should be performed by an authorized Wilbur Curtis service center.

- Do NOT immerse the unit in water or any other liquid
- To reduce the risk of fire or electric shock, do NOT open top panel. No user serviceable parts inside. Repair should be done only by authorized service personnel.
- Keep hands and other items away from hot parts of unit during operation.
- Never clean with scouring powders or harsh implements.

Conventions

 WARNINGS – To help avoid personal injury

 Important Notes/Cautions – from the factory

 Sanitation Requirements

Your Curtis Café System is Factory Pre-Set and Ready to Go… Right from the Carton.

Following are the Factory Settings for your Soluble Delivery System:

- Tank Temperature = 190°F
- Flavor Controls= Set at 50%
- Dispensing Mode Set for Manual Dispensing

Generally there will never be a reason to change your SD2 programming. However, should you need to make slight adjustments to meet your dispensing needs, programming instructions are provided later in this manual.

System Requirements:

- Water Source 20 – 90 PSI (Minimum Flow Rate of 1 GPM)
- Electrical: See attached schematic for standard model or visit www.wilburcurtis.com for your model.

Equipment to be installed to comply with applicable federal, state, or local plumbing/electrical codes having jurisdiction.

SETUP STEPS

The unit should be level (left to right and front to back), located on a solid counter top. Connect a water line from the water filter to the brewer. NOTE: Some type of water filtration device must be used to maintain a trouble-free operation. (In areas with extremely hard water, we suggest that a sedimentary and taste & odor filter be installed.) This will prolong the life of your dispensing system and enhance coffee quality.



The National Sanitation Foundation requires the following water connection:
1. A quick disconnect or additional coiled tubing (at least 2x the depth of the unit) so that the machine can be moved for cleaning underneath.
2. In some areas an approved backflow prevention device may be required between the brewer and the water supply.

1. Connect a water line from your facility to the 1/4” flare water inlet fitting of the valve, behind the machine. Water volume going to the machine should be stable. Use tubing sized sufficiently to provide a minimum flow rate of one gallon per minute.
2. Plug the power cord into an electrical outlet rated at 20A.
3. Switch on the toggle switch, behind the unit, that runs power to the components in the machine. The lights (display window and row of buttons) on the front door will activate and the heating tank will start to fill.
4. Water in the heating tank will require about 30 minutes to reach operating temperature (factory setting of 190°F). At this time the READY LED will light.
5. Remove and fill the canisters with soluble coffee mixes.

OPERATION INSTRUCTIONS

1. Select one of the coffee dispense buttons.
2. Place your cup beneath the spout of the desired coffee flavor.
2. Press and hold the selected PUSH button. Hot coffee beverage will start dispensing.
3. Release the button when the cup is 2/3 full.

FILL CANISTERS DAILY

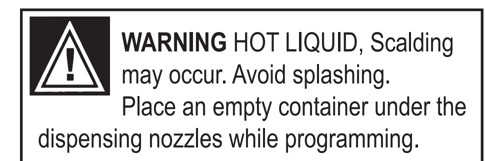
1. Open the front door to access the coffee canisters.
2. The canisters must be removed from the unit for filling. Turn the product delivery elbows upward.
3. Reposition the canisters on the machine, turning the product delivery elbows downward and aligning the gear socket with the motor shaft.

WILBUR CURTIS COMPANY
Montebello, CA 90640

ISO 9001 REGISTERED

Steps to Programming

Your Curtis Cafe System is Factory Pre-Set for Optimum Performance. Usually this Does Not Change.



WARNING HOT LIQUID, Scalding may occur. Avoid splashing. Place an empty container under the dispensing nozzles while programming.

Curtis CAFE SERIES
CAFÉ SD2
PUSH
HOT WATER
PUSH
STOP/WASH
READY
RELEASE BUTTON WHEN CUP IS 2/3 FULL • CAREFUL LIQUID IS HOT
COFFEE DISPENSE
HOT WATER DISPENSE
COFFEE DISPENSE
STOP/WASH BUTTON

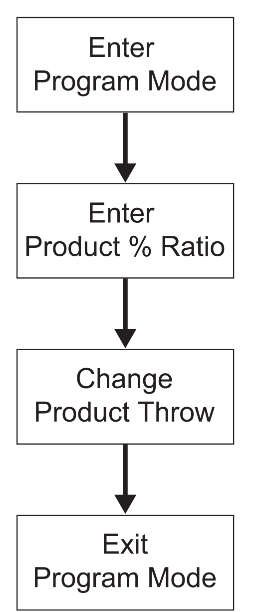
All programming is performed at the control panel (illustration, right).

The Hot Water button is used for only for dispensing hot water and does not require any programming. Water is dispensed as long as the Hot Water button is held down.

The STOP/WASH BUTTON has several functions. This button is used to stop a Portion Control dispense cycle. It is used to wash out the mixing and dispensing systems and it is used to enter programming functions.

Product % Ratio

This controls the amount of dry product that is metered from the hoppers. This can be programmed from 10% to 100% of the capacity of the dispensing system. By counting LED flashes you can determine the product % ratio currently set for this dispense button (see table).



Number of Flashes	Volume
1	10%
2	20%
3	30%
4	40%
↓	↓
10	100%

Enter Program Mode – press and hold STOP/WASH for about ten [10] seconds until all lights start blinking.

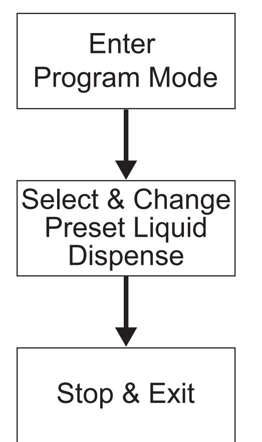
To program Product % Ratio, press and hold the selected PUSH button for approximately one second, then release. The current setting will be indicated by LED flashes.

To change the product throw, press and hold the button until light starts quick flashing. Each quick flash increases the amount by 10%. Release the button when the desired throw amount is achieved. After releasing the button, the number of blinks represent the new setting.

To exit the Powder Dispensing Mode, push the other PUSH button.

Portion Control Liquid Dispensing Mode

This program adjustment allows you to setup the machine to automatically dispense a preset volume of coffee. When the user makes a PUSH button selection, the SD2 unit dispenses only the volume of coffee programmed by the Portion Control Dispensing Mode. By setting the unit for Portion Control Dispensing, you have locked out the manual dispense feature.



Enter Program Mode – press and hold STOP/WASH for about ten [10] seconds until all lights start blinking.

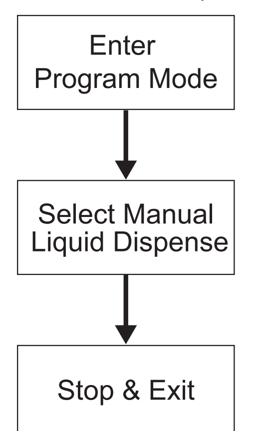
To select & change the Portion Control Dispensing Volume – while in the programming mode, press and hold the selected PUSH button until the liquid begins to flow, then release. The timing starts when liquid begins to flow.

Stop flow and Exit – When the desired volume is achieved, press this PUSH button once again to stop the dispensing. You have now set the timing for this button and have exited the programming mode. Pressing the selected dispense button now will provide the liquid volume that you just set. To reset the timing, you must start again by entering the programming mode.

Programming Continued ...

Manual Liquid Dispensing Mode

This feature sets up the SD2 unit to dispense coffee only as long as the user holds down the selected PUSH button. As soon as the user stops pressing the button, coffee stops flowing into the cup. Setting the unit for Manual Liquid Dispense will turn off the Portion Control Dispense Mode.



Enter Program Mode – press and hold STOP/WASH for about ten [10] seconds until all lights on the control panel are blinking.

Set Manual Dispense – While you are in the programming mode, press and hold the PUSH button.
Hot liquid will start to flow.
Continue to hold down the PUSH button until liquid stops flowing, then release the button.

At this time, you have selected the Manual Liquid Dispensing Mode and have exited out of the programming mode.

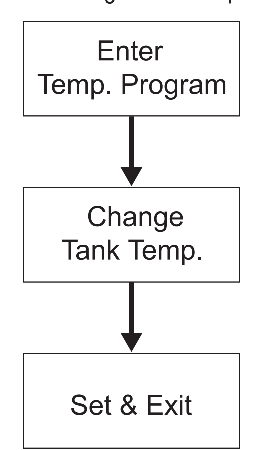
Confirm/Reset Temperature

These features allow you to check the heating tank temperature or change the temperature if desired. The temperature in the tank is programmable from 170°F, in 2 degree increments up to 204°F .

To Confirm Temperature. Press and hold STOP/WASH button for approximately 2-3 seconds. When the READY light starts blinking. Lift off from STOP/WASH button. Each blink equals 2ºF, starting with 170ºF, to a maximum of 204ºF.

Temperature Settings	
Number of Blinks	Temperature
1	170ºF
2	172ºF
3	174ºF
4	176ºF
5	178ºF
6	180ºF
7	182ºF
8	184ºF
9	186ºF
10	188ºF
11	190ºF
12	192ºF
13	194ºF
14	196ºF
15	198ºF
16	200ºF
17	202ºF
18	204ºF

To Change Tank Temperature



Enter Temperature Program Mode. Press and hold STOP/WASH button. READY light will start “quick flashing”.

To Change Temperature. Continue holding STOP/WASH button. Each quick flash equals 2ºF. Release STOP/WASH when desired temperature is reached.

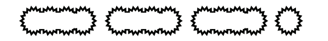
To Set and Exit, press either of the PUSH buttons.

LOW TEMPERATURE LOCKOUT (DELTA): This mode will give you a choice of two minimum operating temperatures. Delta one allows you to operate the unit at a temperature as low as 195º F. Delta two will allow you to dispense at a temperature as low as 185º F. Delta three does not limit the minimum operating temperature. The Cafe system comes from the factory with a Delta three setting. To make adjustments enter Program Mode:

1. Press and hold Stop/Wash button, until all lights on the control panel are blinking, about 10 seconds. Release button.
2. While in the Program Mode, press and hold Stop/Wash button the READY light will begin blinking, continue to hold the Stop/Wash button. The READY light will stop blinking. Continue holding Stop/Wash button until the READY light comes back on in a longer, 3 second glow.
3. Now release the Stop/Wash button The READY light will now blink a pattern of flashes indicating current delta setting.
   - DELTA ONE (one long glow, followed by one blink) allows you to run the coffee dispense at five degree below maximum.
   - DELTA TWO (one long and two blinks) allows you to run the coffee dispense at 15 degrees below maximum.
   - DELTA THREE (one long and three blinks) allows you to operate the unit at any temperature.
4. To change the setting, press and hold the Stop/Wash button for about three seconds until you receive a short flash. Release the button and you will add one blink to the delta pattern or continue holding to add two blinks.
5. To set press any other button. The unit will return to normal operation with the new delta lockout setting.

Error Codes

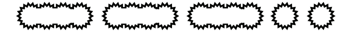
ERROR CODES: Curtis Cafe systems contain various safety features in the electronic circuitry that shut down the functions of the unit in the event of a system failure. Error codes are signalled by the READY light blinking one of two patterns:



WATER LEVEL PROBLEM 3 LONG AND 1 SHORT

The code can be initiated by a variety of occurances.

- A water line is turned off or a filter needs changing.
- A water inlet valve may be malfunctioning.
- A water level probe may be grounded.
- There may be a loose connection or a defect in the control board.



TEMPERATURE SENSOR PROBLEM 3 LONG AND 2 SHORT

- Power may be turned off.
- Temperature sensor may have a bad connection or may not be tight against the tank.
- Heating element may be burned out.
- Control board may be faulty.



CAUTION: DO NOT use undiluted bleach or chlorine.

Flushing the Whipper Chambers

Every three to four hours or more often if necessary flush the whipper chamber/dispensing system.

A. Make sure power is ON.

B. Press and hold the STOP/WASH button. Select one of the PUSH dispensing buttons and press. Hot rinse water will flush out the system. Lift off the STOP/WASH button when water runs clear.

C. Clean up any water that may have spilled.

Cleaning

A. Switch off the unit at the power toggle switch, marked CONTROL, behind the unit.

B. Wipe all exterior surfaces with a damp cloth; removing any spills, dust or debris from the unit.

C. Remove the drip tray and louvered screen and wash out its contents. For hard to clean deposits, use a mild detergent solution.

D. Clean around the dispensing area, wiping with a nontoxic cleaner.

Instructions, Dump Valve Adjustment

Changing the strength of the drink involves adjusting the product flow rate. This is usually done at the front control panel. The regulating of this mix should be done through reprogramming the settings. This setting affects the throw of product only. Through this method, you may change the flavor profile in 10% increments.

The Water flow is preset to ensure optimum mixing and proper chamber rinsing. The valves have been set at the factory and should not require adjusting. The factory flow rate setting is 10 oz. of water in 16 seconds (or 0.63 oz. /sec.).



We recommend that you regulate the water flow in the valve ONLY when replacing a valve.

Dump valve, water flow adjustment:

I. Remove the canisters. Open the front door and on each canister, turn product delivery elbows upward. Take out all product canisters. The valve access panel is behind the canisters. Remove the panel to access the dump valves.



WARNING: As with all electrical equipment, caution must be taken to avoid electrical shock. Be sure the power cord is disconnected before removing components. The following steps will also involve working near hot surfaces.

II. Instructions for replacing a valve:

A. Shut off the water line running into the unit.

B. Drain approximately ½ to ¾ gallon of water from the tank by pressing on of the dispense buttons. This will insure that the water level is below the level of the valves. Remove the wires and water tubing from the defective valve and pull it from the silicone fitting.

C. Disconnect the power cord or turn off the unit at the toggle switch behind the unit.

E. Before installing the new dump valve on the tank, make an initial adjustment with the valve off of the tank.

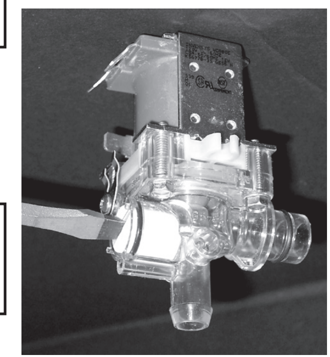


Figure 1. Adjustment

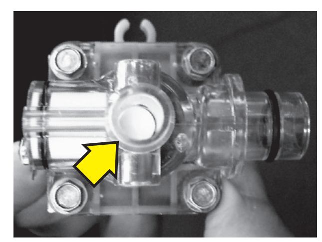


Figure 2. Restrictor Closed.

1. Loosen the small screw on the metal guard. Rotate it away from the adjustment screw (fig. 1.).
2. Carefully, turn flow adjustment screw clockwise all the way in (see figure 2.). Observe restrictor position . Do not overtighten.
3. Now turn the flow adjustment screw counter clockwise three [3] turns (or 1½ turns from the fully open position).
4. Replace the metal guard.
5. Install the valve on the tank, attaching wires and silicone tube. Press the valve fully into the fitting on the heating tank.

II. To adjust a valve currently on your unit or to test the operation of the new valve:

A. Turn on power to the unit. Turn on the water line and allow the tank to refill.

B. Place a container under the nozzle. Allow the unit to return to set temperature (Ready indicator will light).

C. Press the dispense button at the station that you are adjusting.

D. Measure the water volume.

E. Making adjustments of the restrictor with the valve mounted on the tank.

1. Turn the adjustment screw clockwise to decrease water flow.
2. Turn the adjustment screw counter clockwise to increase the water flow..

III. Close the access panel, return canisters to the unit turn the product delivery elbows downward and close the front door.

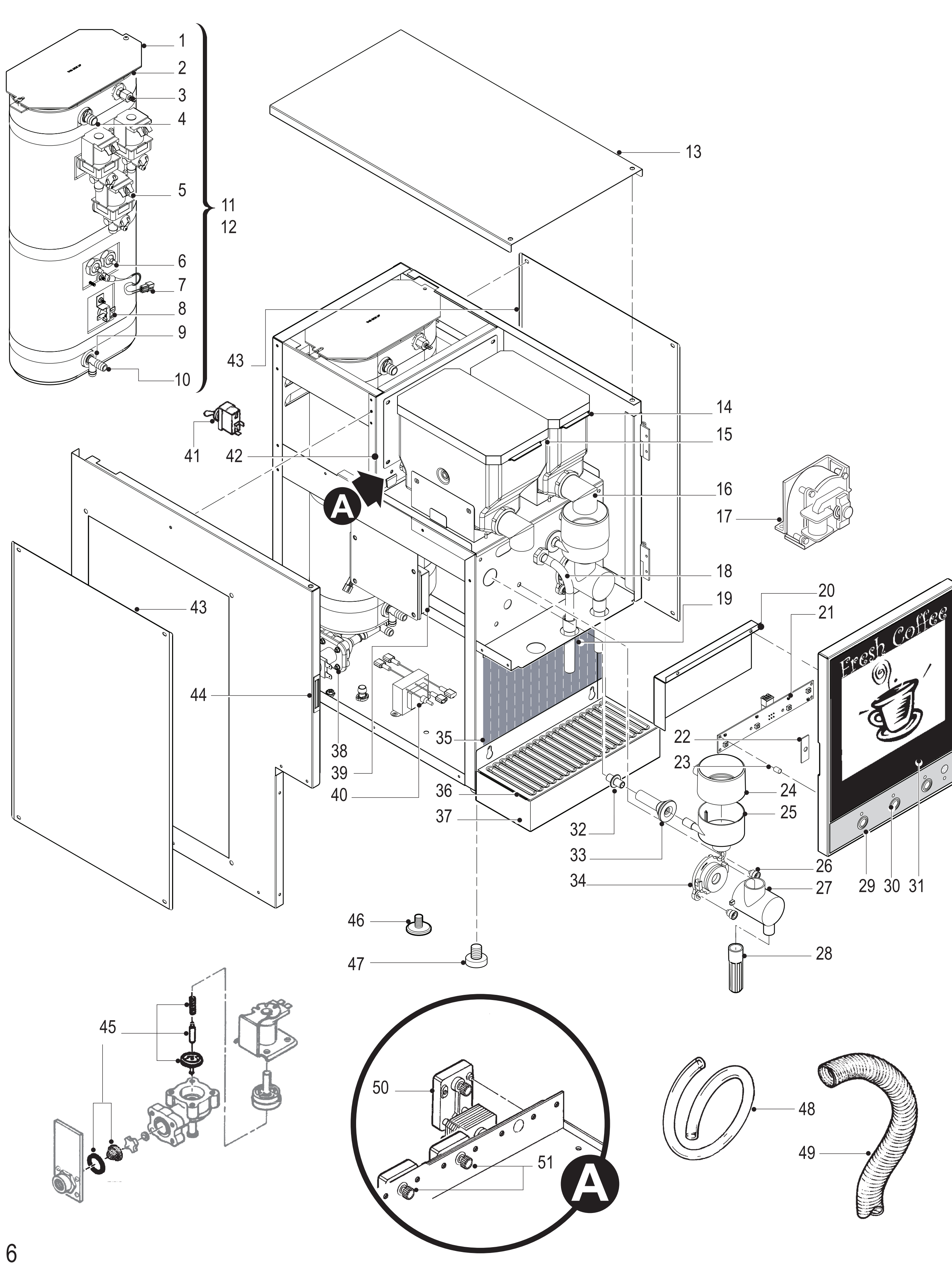
Illustrated Parts List

Item Nº	Part Nº	Description
1	WC-WC-5851	COVER, TANK W/NOTCHES
2	WC-43062 *	GASKET, TANK LID
3	WC-5502 *	PROBE, WATER LEVEL
4	WC-29047	ELBOW, OVERFLOW, PLASTIC
5	WC-3734 *	KIT, DUMP VALVE 120V 12W
6	WC- 904-04*	HEATING ELEMENT 1.6KW 120VAC W/NUTS
7	WC-1438-101 *	SENSOR, TEMPERATURE TANK
8	WC- 521 *	SWTICH, #4680 VESSEL LIMIT
9	WC-2628	BUSHING, CONICAL .469 ID SILICONE
10	WC-29046	TEE, INLET PLASTIC GEN USE
11	WC-54209	TANK, ASSY W/FTNGS & HTNG ELMNT 120V
12	WC-62016	HEATING TANK COMPLETE, 1600W-120V
13	WC-58137	COVER, TOP
14	CA-1113-01 *	CANISTER ASSY, SMALL
15	CA-1111-01 *	CANISTER ASSY, LARGE
16	CA-1026-03	ELBOW, CANISTER
17	WC-37123	FAN, EXTRACT 120V 29CFM 60Hz
18	WC-29601	SPOUT ASSY, HOT WATER
19	CA-1037-6R	TUBE, EXTENSION RED 2.5” LG.
20	WC-58142	COVER, SWITCH PANEL
21	WC- 727-101	PANEL, SWITCH 4 BUTTONS 4 LEDS
22	CA-1135	LATCH ASSY, DOOR SIDE MOUNT
23	WC-43048 *	SPACER BOARD .25 OD x .125L
24	CA-1005-03 *	STEAM TRAP
25	CA-1009-03 *	MIXING BOWL
26	CA-1024-05 *	PILLAR, LOCATION BLACK

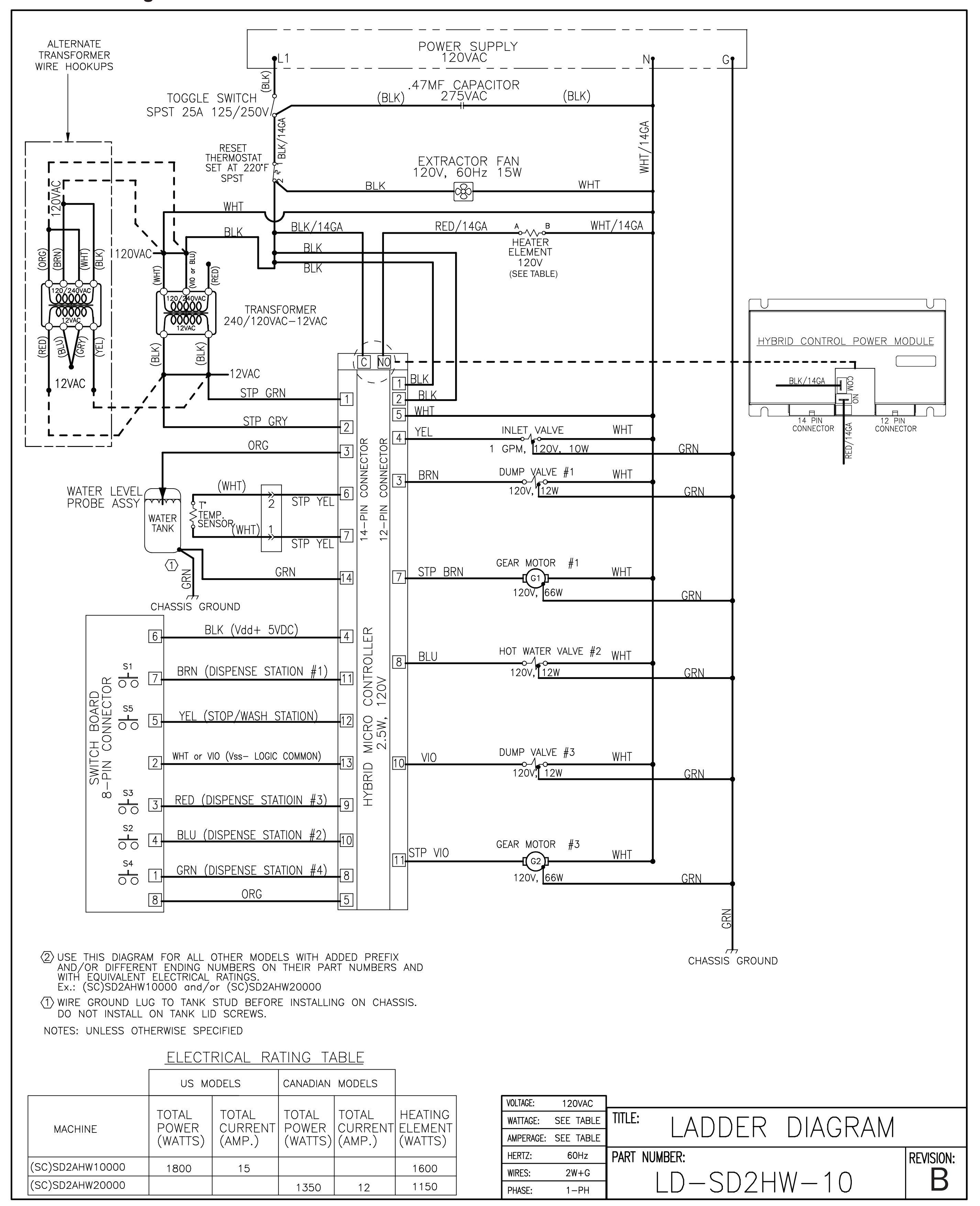
Item Nº	Part Nº	Description
27	CA-1006-03 *	CHAMBER, WHIPPER
28	CA-1128*	NOZZLE, DISPENSE SD2
29	WC-58173	DOOR, FRONT WA
30	WC-39471	LABEL, CONTROL PANEL SD2
31	WC-38290	LABEL, DOOR CURTIS LOGO SD2
32	CA-1095	CONNECTOR, ORIFICE WATER
33	CA-1011-05	BULKHEAD, WATER FITTING
34	WC-66011 *	PLATE, WHIPPER CHAMBER
35	WC-38269	LABEL, SPLASH PANEL
36	WC-58144	SCREEN, DRIP TRAY
37	WC-58180	PAN, DRIP TRAY
38	WC- 826L *	VALVE, INLET 1.15 GPM
39	WC- 788-101*	CONTROL POWER MODULE SD2’s HYBRID
40	WC- 718	TRANSFORMER, 240/120VAC-12VAC 500mA
41	WC- 102 *	SWITCH, TOGGLE NON-LIT 25A 120/240VAC
42	WC-58142	COVER, DUMP VALVES
43	WC-58127	COVER, SIDE ACCESS
44	CA-1049	MAGNET, SNAP-IN
45	WC-3765L*	KIT, INLET VALVE REPAIR FOR USE ON WC-826L
46	WC-3518 *	LEG, GLIDE 3/8”-16 X 1/2”
47	WC-3503 *	LEG, SCREW BUMPER 3/8-16 STUD
48	WC-5310 *	TUBING, 5/16” ID x 1/8” W SILICONE
49	WC-1030-19*	HOSE, EXTRACTOR FAN 19” LONG
50	WC-37201*	KIT, GEAR MOTOR & GEAR SD2 ONLY
51	CA-1036	GEAR, PLASTIC

* Suggested Parts to Stock

Illustrated Parts List



Electrical Diagram



ELECTRICAL RATING TABLE

	US MODELS		CANADIAN MODELS		
MACHINE	TOTAL POWER (WATTS)	TOTAL CURRENT (AMP.)	TOTAL POWER (WATTS)	TOTAL CURRENT (AMP.)	HEATING ELEMENT (WATTS)
(SC)SD2AHW10000	1800	15			1600
(SC)SD2AHW20000			1350	12	1150

Product Warranty Information

The Wilbur Curtis Company certifies that its products are free from defects in material and workmanship under normal use. The following limited warranties and conditions apply:

3 Years, Parts and Labor, from Original Date of Purchase on digital control boards**.**
2 Years, Parts, from Original Date of Purchase on all other electrical components, fittings and tubing.
1 Year, Labor, from Original Date of Purchase on all electrical components, fittings and tubing.

Additionally, the Wilbur Curtis Company warrants its Grinding Burrs for Forty (40) months from date of purchase or 40,000 pounds of coffee, whichever comes first. Stainless Steel components are warranted for two (2) years from date of purchase against leaking or pitting and replacement parts are warranted for ninety (90) days from date of purchase or for the remainder of the limited warranty period of the equipment in which the component is installed.
All in-warranty service calls must have prior authorization. For Authorization, call the Technical Support Department at 1-800-995-0417. Effective date of this policy is April 1, 2003.
Additional conditions may apply. Go to www.wilburcurtis.com to view the full product warranty information.

CONDITIONS & EXCEPTIONS

The warranty covers original equipment at time of purchase only. The Wilbur Curtis Company, Inc., assumes no responsibility for substitute replacement parts installed on Curtis equipment that have not been purchased from the
Wilbur Curtis Company, Inc. The Wilbur Curtis Company will not accept any responsibility if the following conditions are not met. The warranty does not cover and is void under the following circumstances:

1) **Improper operation of equipment:** *The equipment must be used for its designed and intended purpose and function.*
2) **Improper installation of equipment:** *This equipment must be installed by a professional technician and must comply with all local electrical, mechanical and plumbing codes.*
3) **Improper voltage:** *Equipment must be installed at the voltage stated on the serial plate supplied with this equipment.*
4) **Improper water supply:** *This includes, but is not limited to, excessive or low water pressure, and inadequate or fluctuating water flow rate.*
5) **Adjustments and cleaning:** *The resetting of safety thermostats and circuit breakers, programming and temperature adjustments are the responsibility of the equipment owner. The owner is responsible for proper cleaning and regular maintenance of this equipment.*
6) **Damaged in transit:** *Equipment damaged in transit is the responsibility of the freight company and a claim should be made with the carrier.*
7) **Abuse or neglect (including failure to periodically clean or remove lime accumulations):** *Manufacturer is not responsible for variation in equipment operation due to excessive lime or local water conditions. The equipment must be maintained according to the manufacturer's recommendations.*
8) **Replacement of items subject to normal use and wear:** *This shall include, but is not limited to, light bulbs, shear disks, "0" rings, gaskets, silicone tube, canister assemblies, whipper chambers and plates, mixing bowls, agitation assemblies and whipper propellers.*
9) **Repairs and/or Replacements** *are subject to our decision that the workmanship or parts were faulty and the defects showed up under normal use. All labor shall be performed during regular working hours. Overtime charges are the responsibility of the owner. Charges incurred by delays, waiting time, or operating restrictions that hinder the service technician's ability to perform service is the responsibility of the owner of the equipment. This includes institutional and correctional facilities. The Wilbur Curtis Company will allow up to 100 miles, round trip, per in-warranty service call.*

RETURN MERCHANDISE AUTHORIZATION: *All claims under this warranty must be submitted to the Wilbur Curtis Company Technical Support Department prior to performing any repair work or return of this equipment to the factory. All returned equipment must be repackaged properly in the original carton. No units will be accepted if they are damaged in transit due to improper packaging.* **NO UNITS OR PARTS WILL BE ACCEPTED WITHOUT A RETURN MERCHANDISE AUTHORIZATION (RMA). RMA NUMBER MUST BE MARKED ON THE CARTON OR SHIPPING LABEL.** All in-warranty service calls must be performed by an authorized service agent. Call the Wilbur Curtis Technical Support Department to find an agent near you.



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